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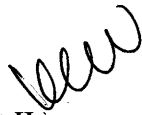
TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 13, 2010

TO: Internal File

THRU: Daron Haddock, Lead 

FROM: Ingrid Wieser, Environmental Scientist II 

RE: Winter Quarters Ventilation Facility, Canyon Fuel Company LLC, Skyline Mine,
Permit # C/007/0005 Task ID #3504

SUMMARY:

In October 2009, Canyon Fuel Company (CFC) submitted an application to the Division to construct a ventilation facility in Winter Quarters Canyon. CFC withdrew the application in December of 2009 and resubmitted the application in January 2010. CFC plans to construct the facility in 2010. The facility would add 7.93 acres to the permit area. The Division recently defined "permit area" as areas with surface disturbances only. Therefore defining all other area (subsidence zones, etc) as adjacent area. In response, CFC also updated every map within the approved MRP to show the permit area as only surface disturbed areas and all else as adjacent area.

CFC plans to upgrade and relocate parts of the existing road used to access the proposed facility. Numerous studies were conducted in the canyon in order to comply with all associated Utah Coal Rules. These studies include a cultural resource inventory, wildlife inventories, aquatic wildlife consultation, vegetation and sensitive species sampling, and production estimates. The cultural resource inventory includes the entire Winter Quarters Townsite, which extends beyond the proposed disturbed area. The Utah State Historic Preservation Office recommended that the project area *and* the powerline corridor be included as a single undertaking. The Division did not require that the powerline corridor be included in the permit area, and therefore did not require CFC to include cultural resource inventories of the powerline corridor in the application. (See further discussion in the cultural resources section below).

This amendment is recommended for approval pending the signed MOU between the Division, SHPO and the permittee.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

The letter included with the application states that due to the recent interpretation of 'permit boundary' by the Division, every plate illustrating permit areas was modified as part of the submittal. The permittee changed map 1.6-3, skyline mines permit area, so that the previous permit area line is now the adjacent area line. The permittee also added a new boundary line to this map, which depicts all surface disturbances as the permit boundary. This includes roads, pipelines, portal yard, conveyor bench, loadout, waste rock disposal site and the proposed winter quarter's ventilation facility. The narrative at the bottom of the map states that the adjacent area is ¼ mile beyond lease acreage. However, the line does not depict this, and a ¼ mile is not sufficient for certain disciplines including hydrology and wildlife resources. The Division does not require that adjacent area be defined on a map. Adjacent area can vary in size according to individual disciplines such as hydrology, biology, etc. If the permittee chooses to depict the adjacent area on a map with a boundary line, then the adjacent area, according to R645-100-200 definition is:

“the area outside the permit area where a resource or resources, determined according to the context in which adjacent area is used, are or reasonably could be expected to be adversely impacted by proposed coal mining and reclamation operations, including probable impacts from underground workings”.

For the context of biology, cultural resources and land use, this area may be different for all three. For instance, adjacent area for a surface disturbance with respect to cultural resources would be relatively small because the area that 'reasonably could be expected to be adversely impacted' from a surface disturbance is very minor and could be none. However, the adjacent area relative to high value habitat for the same surface disturbance could be quite significant because wildlife utilizing the habitat could be impacted from visual, auditory and other disturbances. From this standpoint, it is recommended that the permittee either eliminate the

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adjacent area line from the map or place the line according to the resource with the largest adjacent area.

In the March 24, 2010 response to deficiencies submittal, the permittee explained that the lease boundaries were added to the permit area map (Map 1.6-3) and the adjacent area line was modified to include a ½ mile buffer around the surface disturbances and underground workings. The map also explains that the adjacent area pertaining to water resources is included on the CHIA map.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

A summary of the cultural resource evaluations can be found on page 2-4c1 of Section 2.1. Earth Touch Inc. completed a cultural resource assessment for the proposed ventilation facility in April of 2009. This report will be incorporated in the confidential MRP binder. The project area is located in Winter Quarters Canyon and consists of approximately 7.93 acres comprised of the facility and a 530 ft. stretch of road that will be rerouted to provide access. Additional area was studied along a 1.5-mile stretch of Winter Quarters Canyon where the power line corridor will be located. A class I file search of the project area was conducted at the SHPO office on September 25, 2007 and another at the Manti la sal Forest Service office in October of 2007. A class III pedestrian inventory was completed by EarthTouch in October of 2007 through November of 2008. A winter quarter's townsite map is located in Appendix C of the report.

The Winter Quarters townsite is listed as site 42CB268 from previous surveys. This assessment added forty features to the existing townsite and brief summaries of these features are located within the report. The townsite has been recommended for listing as a significant historic property since the 1981 inventory under criterion A, C and D. However, several landowners have objected to the nomination for listing in the national register and the listing was temporarily postponed. The report states that sites that are determined potentially eligible regardless of listing in the National Register are still to be treated as eligible, listed sites.

EarthTouch consultants concluded that development of the proposed ventilation facility would have an adverse effect on a portion of the historic Winter Quarters Townsite including

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seven associated features eligible for listing. The consultant also determined that the following restrictions would need to be placed on the mine operation in order to protect unidentified cultural properties:

1. Personnel and equipment associated with the project should be restricted to the area cleared for the project.
2. Personnel associated with the project should refrain from collecting or otherwise disturbing cultural materials that may be encountered during development.
3. If unrecorded cultural materials are encountered during the project, activities in the affected area should cease, and the USHPO should be notified before development in the area is resumed.
4. Human burials or other physical remains encountered during the project, require immediate cessation of activity in the affected area, as well as immediate notification of proper authorities. Native American burials or other remains must be reported to the Utah SHPO and appropriate Native American groups.

The report was sent to the SHPO by the Division with a request for concurrence on the finding of adverse effect on November 17, 2009. USHPO granted concurrence with the original report on November 23, 2009. (See Incoming File 0067). The permittee then withdrew the amendment application.

On January 11th 2010, the permittee resubmitted the application and revised the disturbance area so that it was isolated to the north side of the stream rather than over the stream. In this submittal of the application, the permittee included an addendum to the original cultural resource report. This addendum was developed in consultation with the Division, USHPO, and PLPCO and included a mitigation plan for the eleven features to be affected. The eleven features included stone foundations, earthen foundations, walls, and a leveled area. The consultant concluded that the disturbance area will be far enough away and hidden by the canyon so that the proposed facility would have no impact on the view shed of the main townsite. Also, due to the degradation of the features to be impacted, excavation would contribute little to no significant data. Therefore, the consultant proposed that adequate mitigation would include a detailed GPS inventory of all features associated with the townsite, and an informational sign along route 96. The detailed GPS inventory has been completed. The informational sign will be placed next to existing signs associated with the Huntington and Eccles Canyons National Scenic Byway. Further information regarding the sign can be found in appendix B of the addendum report.

The addendum report was submitted to SHPO for concurrence on January 19, 2009. However, SHPO wrote to the Division on March 23, 2010 explaining that concurrence could not be provided until the powerline was included in the undertaking and until the mitigation plan included an informational booklet (See 2010 Incoming 0019). The Division met with the permittee, Lori Hunsaker (USHPO) and Kelly Beck (PLPCO) on April 6, 2010. The permittee,

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USHPO and the Division developed an MOU which committed the permittee to submitting an alternate mitigation plan which includes an informational booklet. The MOU will explain DOGM's regulatory authority and jurisdiction which does not include the powerline corridor in the permit area. This plan can be approved once the MOU is finalized.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section. However, prior to approval, the USHPO must concur with the Division's findings. When finalized and signed, the MOU developed between the Division, USHPO and the permittee will satisfy this requirement.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

Vegetation information of the permit area is located in Vol. 1A Sec.2.7, 2.7.1, and 2.7.6. Survey reports are included in the MRP in Vol. A-2 North Lease 2nd volume and Vol. A-2 2nd Volume. Section 2.7.8 located on page 2-63 includes a summary of the vegetation analysis for the proposed winter quarters ventilation facility. Vegetation information was collected in 2008 and revised in 2009. The proposed site is located approximately 24 ft. from the stream bank. The proposed pad area contains sagebrush and mountain brush south facing hillside, and minimal riparian areas. The riparian areas are degraded due to heavy livestock grazing and a large population of noxious weeds.

Productivity information is summarized on page 2-127 of section 2.12. NRCS Range Management Specialist, Dean Stacy, assessed the proposed ventilation facility area for productivity. Mr. Stacy determined that the area ranked low on the Potential Natural Community Scale. The south-facing slope (where the disturbance will be located) was approximated at 1300 lb./ac productivity. The Willow and aspen communities were estimated at only 800 lb. /ac. The NRCS report is located in Appendix A-2 Vol. 2.

Dr. Patrick Collins of Mt. Nebo Scientific conducted the vegetation survey in July of 2009. During construction and operations of the ventilation facility, disturbance will be contained on the sagebrush/grass community. A survey was conducted on this area and on the proposed reference site.

Sagebrush Grass Community (proposed disturbed area and reference area)

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The living cover was 48.5% and the woody species density was 6303 stems per acre. The reference area for this community is shown on Map A of the report. For the reference area, living cover was 49.75% and woody species density was 4389 stems per acre.

Riparian Area (proposed Disturbed and reference area)

Very little disturbance will occur within the riparian area during the construction and operation of the ventilation facility. Therefore, no revegetation success standards were needed for this community. A very small portion of riparian habitat might be affected and a riparian seed mixture will be used during reclamation for this area.

Page 9 of the report suggests that a lower woody stems per acre amount should be used as a standard in order to achieve a more suitable grazing habitat in the area. The Division and DWR will conduct a site visit this spring to determine the appropriate standard for woody stems density.

Color photographs and a map are provided in the report.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

Fish and wildlife information pertaining to the Winter Quarters Canyon proposed facility can be found in Section 2.1 page 2-4d, Sec 2.8 p 2-67. Surveys associated with the canyon have been conducted since 2005. Page 2-104(j) of section 2.9.5 (a) summarizes the data that has been collected for the proposed project. All surveys conclude that the project will have minimal effects on fish and wildlife.

The winter quarters ventilation facility proposal suggests that water will be discharged from the site to the adjacent stream. A letter from Earthfax dated March 16, 2010 is included in the application to be incorporated in Appendix A-1 volume 2. The letter discusses the effects from increased water discharge on stream morphology. Earthfax modeled the stream discharge using FlowMaster version 6.0 software with an estimated discharge of 1000 gpm through an 18" corrugated metal pipe. All modeled stream flow scenarios, including a maximum of 2800 gpm (taken from monitoring station CS20) were considered to be non-erosive. The

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water discharge must remain under the maximum of 6,217 gpm in order to be non-erosive. This criteria will be added to the master commitment list under the hydrology requirements.

Macroinvertebrate Sampling:

Page 2-67 of sec. 2.8 summarizes the macroinvertebrate sampling plan for the proposed Winter Quarters Ventilation Facility. The Winter Quarters Canyon Creek has a moderate population of macroinvertebrates according to the 1995 environmental assessment by the USFS and BLM. Presence and abundance of certain macroinvertebrate populations can be very useful in evaluating the health of a stream. Sampling locations are located on Plate 2.8.1-1 and sampling frequency is located on table 2.8-1a. Plate 2.8.1-1 indicates that there are three sampling points above the proposed winter quarter's ventilation facility. The purpose of the surveys is to determine the effect of the construction and operations on the stream. Therefore, there must be a sampling point below the proposed facility so that it can be compared to pre activity conditions as well as upper stream conditions. Table 2.8-1a shows that Winter Canyon has been monitored for macroinvertebrates at the three sites above the ventilation facility fall of 2002, spring and fall of 2003, spring 2004, fall 2007, and spring 2008. Future surveys are scheduled for fall 2011, spring 2012, and spring/fall every three years thereafter until 2023.

The withdrawn application, submitted in October 2009, included correspondence between Mr. Galecki of CFC and Dr. Shiozawa from Mt. Nebo Scientific regarding the fish habitat in the stream. This current submittal does not have any baseline information regarding the stream because the stream will no longer be culverted. However, according to the application, a large volume of water will be discharged from the ventilation pad to the stream. This discharge could potentially alter the stream morphology and may have an adverse affect on the stream habitat. CFC consulted with Dr. Shiozawa on this issue at the request of the Division in March 2010. Dr. Shiozawa explained that the section of stream in the vicinity of the WQVF is not conducive to macroinvertebrate monitoring due to low gradients and accumulation of fine sediment. In order to monitor the health of the stream, Dr. Shiozawa recommended that he conduct electro fishing surveys on a three-year interval. (See following paragraph).

Electro Fishing Surveys

The Aquatic Monitoring Program for winter quarters has been added to the text of the MRP as in section 2.8.1 page 2-71 b and table 2.8.1a. Two electro fishing sites, each 150m in length upstream and downstream, were established in Winter Quarters Creek. Dr. Shiozawa has recommended a three year sampling interval to minimize stress on the fish population. Table 2.8-1a has been updated to include the surveys which start in the Fall of 2010 and currently continue through the fall of 2022.

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This report was conducted by Western Land Services, Inc and prepared in July of 2009. The Northern Goshawk and flammulated owl surveys were conducted using the USDA Forest Service protocols. The Northern Saw Whet Owl survey protocol was very similar to the flammulated owl survey. No responses were elicited from any of the three species.

While conducting these surveys, Elk and mule deer were encountered and the locations were recorded. It was determined that the canyon, including the proposed pad area, was suitable for elk calving.

A map is included at the end of the report showing the survey boundary (1/2 mile from proposed pad area and subsidence area) and call station locations.

Tetra Tech Letter Appendix A-3, Vol. 2

The application includes a letter from the consultant Tetra Tech regarding the Winter Quarter's Canyon Wildlife Studies Summary for 2006 through 2008. The letter will be incorporated in Appendix A-3, vol. 2. Tetra tech conducted surveys between these times for Northern Goshawks. Only one Goshawk was observed within a mile of the proposed ventilation pad area. No nests were found. Elk, elk calves, mule deer, and mule deer fawns have been documented throughout the canyon, but greater than a mile from the pad site. Therefore, the consultant concluded that no impacts to wildlife should occur with the construction of the ventilation facility.

The letter also addressed the exhaust fan sound and its potential impact to wildlife. A sound study was conducted by Tetra tech for SUFCO mine in 2008. It was concluded that ventilation fans produce noise that recedes to background noise levels at about 1.43 miles. Furthermore, the consultant believes that with the additional topography, the Winter Quarter's Canyon should provide a greater buffer to the sound and reduce the travel area.

The letter includes Table 1: Winter Quarters Canyon Northern Goshawk Calling Station results 2006-2008 within one mile of the proposed ventilation shaft and pad. Other wildlife observed according to the table include: green tailed towhee, olive sided flycatcher, marten, red tailed hawk, mule deer, elk, sharp shinned hawk, sage thrasher, sparrow, golden eagle, coopers hawk, woodpecker and ravens.

The fish and wildlife information was sent to Nicole Nielson of the Division of Wildlife Resources on Feb. 4, 2010 to inform DWR and elicit any recommendations or concerns they might have with the proposed project.

Findings:

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The information provided is considered adequate to meet the minimum regulatory requirements for this section.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

Land use information is located on page 2-125 of Sec. 2.12. Current and historic land uses of the Winter Quarters Canyon are described as grazing, wildlife habitat, recreation, hunting, forestry and timber production and mining. The condition and capability of the land is also described on page 2-63 of Section 2.7. The area has been heavily grazed and is invaded with the noxious weed *Carduus nutans*. The condition and capability of the land may therefore improve after reclamation and bond release.

Table 2.12.2-1 lists the grazing potential for the area to be affected by mining surface operations and facilities. The table also lists that the Winter Quarters proposed ventilation pad has a land disturbance area of 2.36 acres of sagebrush with 114 Animal Units and 3.8 Animal unit months.

Table 4.12-1 lists the premining land use as Grazing, mining and wildlife.

A land use map can be found in the approved M&RP as plate 2.12.1-1. This map shows that the proposed ventilation facility is adjacent to the Manti-la Sal National Forest and several grazing allotments. The proposed facility is located on private property, which is used for cattle grazing.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

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Archeological Site Maps

The cultural resources map for the ventilation facility is located in the Cultural Resource report and addendum NO. 09-0137. The map shows the facility boundary and the affected resource locations.

Monitoring and Sampling Location Maps

The Macroinvertebrate Sample Site locations Map is labeled as DWG NO: 2.8.1-1. This map includes the locations of ten monitoring points within the burnout, James, Eccles, Winter Quarters and Woods Canyons. There are three Winter Quarters sample sites, an upper, middle and lower reach. All three are located upstream from the proposed disturbance area. A sample site needs to be established below the proposed disturbed site in order to assess the impact to the stream from the disturbance. This deficiency is listed in the previous section Fish and Wildlife Resource information.

Vegetation Reference Area Maps

A map of the vegetation types in the winter quarters permit and adjacent area is labeled DWG. NO: 2.7.1-1a. The map shows that the proposed permit area consists of a sagebrush/grass community with scattered mountain brush areas. The adjacent area vegetation includes aspen, oak, conifer, sagebrush/grass, and riparian. The location of the sagebrush/grass reference area is located on Map 1 of the Vegetation report for the ventilation shaft site located in Appendix A-3 of vol. 2. The reference area is approximately 900' from the proposed disturbed site and is located at: UTM NAD 27 0483296 E 4396592 N.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

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Regulatory Reference: 30 CFR 784.17; R645-301-411.

Analysis:

The cultural resource report for the proposed ventilation facility is located in the confidential binder. Page 4-84 of section 4.14 includes a summary of the Protection plan of public parks and historic places. Earthtouch consultants recommended that excavation of any of the features that will be affected by the facility would contribute no significant data. Therefore, Earthtouch recommended that the operator conduct a mitigation plan involving a detailed GPS inventory of all features within the townsite and an informational sign for the public about the site. The report and mitigation plan was sent to the Utah SHPO for concurrence on January 19, 2010. This plan has been discussed with representatives from the Division, PLPCO and SHPO. The operator will implement the plan upon approval of this application.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Protection and Enhancement Plan

Page 2-68 of Sec. 2.8 indicates that silt fencing will be installed along the entire length of the construction zone to minimize sediment loading in the stream that may impact fish. Long-term sediment control will include installation of a sediment pond.

The Protection plan is located on page 2-99 under section 2.9.4 of volume 1A in the official M&RP. In this section, the permittee describes five disturbances to wildlife from mining operations including: surface disturbance, loss of habitat, noise, human activity and air pollution. The protection plan specific to the winter quarters ventilation facility is on page 2.104j of this section. The 2009 tetra tech report located in Appendix A-3 notes that there will be minimal effects on mammals and game species during the construction and operation of the facility. Furthermore, the permittee states that minimum temporary habitat loss will occur in relation to the abundant surrounding habitat for wildlife. Once the facility is in operation, the facility will not be accessed on a regular basis. The tetra tech report also addresses the issue of noise disturbance to wildlife. The consultant concluded that the orientation of the fan with respect to

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topographic features, vegetation buffers, time of day, wind patterns, seasonal events and other factors will be key in sound reduction of the facility. The consultant also concluded that no sensitive resource locations such as nesting raptors, elk calving or mule fawning areas are located in or adjacent to the project area, and therefore minimal impacts should occur. However, the 2009 wildlife report by Western Land Services states "portions of the pad disturbance area contain areas suitable for elk calving". The DWR lists the canyon as high value summer habitat for mule deer and critical summer habitat for rocky mountain elk. At the request of the Division, Western Land Service provided an addendum report based on the revised pad location. The addendum will be incorporated in Appendix A-3, volume 2. This addendum states that the habitat surrounding the current proposed pad location does not exhibit suitable habitat characteristics for elk calving.

A summary of the enhancement plan is located on page 4-103B of Section 4.18. The plan includes the diverse revegetation seed mixture to be utilized at reclamation and the buffer zone that will be utilized during mining activities. The revegetation process may act as an enhancement to the area because of the current degradation of the site. The site has been overgrazed and has a high concentration of noxious weeds. (See Mt. Nebo Report in Appendix A-2, Vol. 2.) Page 4-103B of section 4.18 and page 40-50(a) of section 4.7 state that noxious weeds invading the site will be controlled by hand grubbing, and/or approved herbicides. A visual monitoring of the noxious weeds will be submitted annually.

Endangered and Threatened Species

Reports for TES species are located in Appendix A-2, Vol. 2 and Appendix A-3, volume 2. Page 2-111b of sec. 2.10 states that no TES species have been documented in studies involving the Winter Quarters Ventilation Facility that would prohibit construction. A TES analysis is included in the Vegetation report conducted by Dr. Patrick Collins titled, "Vegetation Sampling & Sensitive Species at the Ventilation Shaft Site in Winter Quarters Canyon." Page 13 of the report includes a list of seven federally listed threatened, endangered & candidate species in Carbon County and their presence in the proposed ventilation area. No TES species was found or had habitat in the project area.

Bald and Golden Eagles

Page 2-111b of Sec 2.10 summarizes the raptor inventories conducted in the Winter Quarters Canyon. Raptor surveys conducted in 2005-2007 are located in the applicable exploration applications.

The confidential 2nd volume of Appendix volume A-4 includes raptor surveys. A raptor survey was conducted in winter quarters canyon in 1993 and two redtailed hawks were observed but no nests were identified. A preliminary ground survey and follow up survey for the lease expansion was conducted by Jim Parrish in 1992 and 1993. Nests were located in section 22, 28,

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34, 26, 25, 36, 3, 4, 9 and 1. The nest in section 1 is within ½ mile of the proposed facility; however, the nest could not be ground surveyed for activity because it was on private property and outside the permit boundary at the time. The survey states that golden eagles in this area tend to nest in trees. Another survey was conducted in 2005. Three golden eagle nests were identified, but all were well over one mile from the proposed ventilation facility. The survey conducted in 1997 shows an active kestrel, active redtail hawk and one inactive nest over a mile from the site.

A letter from DWR to the Division in 2000 suggests that aerial raptor surveys should not be discontinued for skyline mine due to the habitat including dense conifers. (See 2001 incoming file 0036).

In a conversation with Mace Crane of Western Land Services, Mr. Crane confirmed that there was not suitable habitat for golden eagles within or adjacent to the project area. He felt that surveys specific to golden eagles were not necessary, and that during the Goshawk and flamulated owl surveys conducted for the area (see appendix A-3 Vol. 2), no evidence of golden eagles was found. (See 2010 incoming email 0011). This email will be incorporated in Appendix A-3 Vol. 2.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

Protection of the stream and riparian area during construction and operation of the ventilation facility is located in several places including: p. 2-4d of section 2.1, p. 2-63 of section 2.7, p. 2-67 thru 2-68 of section 2.8, p. 2-127 of section 2.12, and p. 4-90 of section 4.14,

The activities will stay a minimum of 2 bankfull widths (approx. 24 ft) from the stream. Silt fencing will be installed prior to construction to minimize sediment and debris entering the creek. Sediment ponds will be installed for long term sediment control in the stream. Dr. Pat Collins of Mt. Nebo Scientific suggested that successful revegetation of impacted riparian areas is very likely due to the vegetation present and the available water. Macroinvertebrates will be monitored on a regular basis to assess the water and habitat quality of the stream and riparian area. (See discussion under Fish and wildlife resource information and Protection of fish and wildlife and related environmental values.)

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

VEGETATION

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Analysis:

The operator has committed to containing the surface disturbance to two full bankwidths from the stream in order to protect the riparian vegetation and habitat. The 2009 tetra tech report located in Appendix A-3 notes that minimum temporary habitat loss will occur in relation to the abundant surrounding habitat for wildlife. Page 3-72(b) of section 3.2 describes that the removed topsoil will be stockpiled and seeded with the interim seeding mixture. Silt fences will control erosion until interim vegetation has been established.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

RECLAMATION PLAN

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The proposed postmining land use for the ventilation facility is listed on table 4.12-1 on page 4-75 of section 4.12. The proposed postmining land use is listed as grazing and wildlife. The table also lists that the Capacity to support the proposed use is adequate. The capacity of the land to support the land use argument is on page 2-63 of Section 2.7. This is summarize in the previous section of this menu, "land use Resource Information".

Page 4-81 of section 4.12 includes a narrative regarding the postmining land use of the ventilation facility. The premining land uses of private native rangeland habitat will be restored with reclamation. *Note: postmining land use of wildlife habitat requires that the Division and DWR set a standard of success for the woody stems density. This will be discussed in the section under revegetation.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General

The operator plans to remove all topsoil from the entire surface disturbance site and stockpile it until reclamation. At reclamation, the entire site will be reclaimed including soil distribution and revegetation. During operations, the topsoil stockpile will be revegetated and erosion control will be achieved by using sediment ponds. Therefore, all reclamation work will occur at one time at the end of the site use and no contemporaneous reclamation is planned.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

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Revegetation: General Requirements

Section 2.7 and Appendix A-2 contain a discussion for the vegetation of the proposed ventilation facility. The interim and final revegetation seed mixes are listed in Tables 4.7-8A through table 4.7-8C.

Table 4.7-8A lists the Interim revegetation seed mix for the proposed ventilation facility. The mix contains the following: thickspike wheatgrass, western wheatgrass, slender wheatgrass, northern sweetvetch and Kentucky bluegrass. The seed mix will be broadcast seeded.

Table 4.7-8B lists the Final Revegetation Seed mixture for the riparian community at the proposed ventilation facility. The mix contains multiple forb and grass species. The table also indicates that willows will be planted from containerized, bareroot or local cuttings in a staggered or clumped fashion at a rate of one plant per 10 linear feet of streambank.

Table 4.7-8C lists the final revegetation seed mix for the sagebrush/ grass community at the proposed ventilation facility. The list contains multiple species of shrubs, forbs, and grasses, which will be broadcast, seeded at final reclamation.

The permittee intends to establish a vegetative cover on all regraded and other disturbed areas by using the interim and final revegetation seed mixes.

Revegetation: Timing

Page 4-3(a) of section 4.1 includes the reclamation plan for the winter quarters ventilation facility. It states that the site will be reseeded as outlined in Section 4.7 of the M&RP. Page 4-42 of Section 4.7 states that planting and revegetation of all disturbed areas will take place following grading and topsoil redistribution in the fall. The reclamation timetable is listed on page 4-7 of section 4.2.

Revegetation: Mulching and Other Soil Stabilizing Practices

No mulching or other soil stabilizing practices are listed in the revegetation section. However, section 4.3 lists bonding calculations including a mulch of hay and hydroseeding equipment.

Revegetation: Standards For Success

Reclamation area standards are located in the Mt. Nebo Report in appendix A-2. The revegetated areas must meet the ground cover, production and stocking density standards. The Division in consultation with the DWR will set the woody density standard.

Findings:

The information provided in the application is considered adequate to meet the minimum regulatory requirements for this section.

RECOMMENDATIONS:

The amendment application is recommended for approval.